

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S2	1	10/044217	US-PGPUB; USPAT; USOCR; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:21
S3	555143	(system or network or simulation) and @rlad<"20000228"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:31
S4	471	((system or network) and simulation).ab. and @rlad<"20000228"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:24
S5	20	S4 and (receiv\$3 or transmit\$4) and packet	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:25
S6	20	S5 and interfac\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:26
S7	16	S6 and software	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:26
S8	313	S4 and interfac\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:26
S9	237	S8 and software	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:26

S10	207	S9 and (buffer\$3 or memory)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:27
S11	52	S9 and ((buffer\$3 or memory) with (variable or chang\$5 or various))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:28
S12	52	S11 and simulation	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:29
S13	28	S12 and transmit\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:29
S14	36	S12 and (transmission or transmit\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:29
S15	35	S14 and receiv\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/19 09:49
S16	4	S15 and thread	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:30
S17	4	S15 and thread\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/18 17:30

S18	553349	(network or system) and @rlad<"20000228"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/19 09:50
S19	42316	S18 and simulat\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/19 09:51
S20	3751	S19 and thread\$3	USPAT	OR	ON	2005/07/19 09:52
S22	1623	S20 and (buffer\$3 or memory or memories)	USPAT	OR	ON	2005/07/20 13:35
S23	1399	S22 and (data or packet or traffic)	USPAT	OR	ON	2005/07/19 09:53
S24	1063	S23 and (send\$3 or transmit\$4)	USPAT	OR	ON	2005/07/19 09:54
S25	1027	S24 and (receiv\$4)	USPAT	OR	ON	2005/07/19 09:54
S26	187	S20 and ((buffer\$3 or memory or memories) with (variable or changeable)).	USPAT	OR	ON	2005/07/19 10:04
S27	553349	(network or system) and @rlad<"20000228"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/19 16:38
S28	42316	S27 and simulat\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/19 16:38
S29	3751	S28 and thread\$3	USPAT	OR	ON	2005/07/19 16:38
S30	1	S29 and software	USPAT	OR	ON	2005/07/19 16:38
S31	553349	(network or system) and @rlad<"20000228"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/20 13:45
S32	42316	S31 and simulat\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/20 13:45
S33	10064	S32 and ((buffer\$3 or memory or memories) with (stor\$4 or transfer\$4))	USPAT	OR	ON	2005/07/20 13:45

S34	9887	S33 and (data or packet or information)	USPAT	OR	ON	2005/07/20 13:46
S35	8933	S34 and (transfer\$3 or transmit\$4 or send\$3 or sent)	USPAT	OR	ON	2005/07/20 13:46
S36	8040	S35 and (receiv\$3)	USPAT	OR	ON	2005/07/20 13:47
S37	1467	S36 and (software with interfac\$3)	USPAT	OR	ON	2005/07/20 13:47
S38	313	S37 and thread\$3	USPAT	OR	ON	2005/07/20 13:47
S39	285	S38 and display\$3	USPAT	OR	ON	2005/07/20 13:47
S40	285	S39 and stor\$3	USPAT	OR	ON	2005/07/20 13:48
S41	285	S40 and (modify\$3 or modified or chang\$3)	USPAT	OR	ON	2005/07/20 13:48
S42	247	S41 and (remov\$3 or discard\$3)	USPAT	OR	ON	2005/07/20 13:49
S43	0	S41 and ((remov\$3 or discard\$3) with preamble)	USPAT	OR	ON	2005/07/20 13:49
S44	82586	(computer with (network or system)) and @rlad<"20000228"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/20 14:19
S45	13192	S44 and simulat\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/20 14:20
S46	6319	S45 and ((buffer\$3 or memory or memories) with (stor\$4 or transfer\$4))	USPAT	OR	ON	2005/07/20 14:20
S47	6281	S46 and (data or packet or information)	USPAT	OR	ON	2005/07/20 14:21
S48	5744	S47 and (transfer\$3 or transmit\$4 or send\$3 or sent)	USPAT	OR	ON	2005/07/20 14:21
S49	5349	S48 and (receiv\$3)	USPAT	OR	ON	2005/07/20 14:21
S50	1335	S49 and (software with interfac\$3)	USPAT	OR	ON	2005/07/20 13:52
S51	281	S50 and thread\$3	USPAT	OR	ON	2005/07/20 13:53
S52	254	S51 and display\$3	USPAT	OR	ON	2005/07/20 13:53
S53	254	S52 and stor\$3	USPAT	OR	ON	2005/07/20 13:53
S54	254	S53 and (modify\$3 or modified or chang\$3)	USPAT	OR	ON	2005/07/20 13:54
S55	0	S53 and ((remov\$3 or discard\$3) with preamble)	USPAT	OR	ON	2005/07/20 13:49
S56	216	S53 and (remov\$3 or discard\$3)	USPAT	OR	ON	2005/07/20 13:54
S57	2026	S49 and ((software or program) with interfac\$3)	USPAT	OR	ON	2005/07/20 14:22

S58	415	S57 and thread\$3	USPAT	OR	ON	2005/07/20 14:22
S59	361	S58 and display\$3	USPAT	OR	ON	2005/07/20 14:22
S60	359	S59 and stor\$3	USPAT	OR	ON	2005/07/20 14:22
S61	359	S60 and (modify\$3 or modified or chang\$3)	USPAT	OR	ON	2005/07/20 14:23
S62	309	S61 and (remov\$3 or discard\$3)	USPAT	OR	ON	2005/07/20 14:23
S63	27807	(computer with network\$3) and @rlad<"20000228"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/20 14:19
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S65	2514	S64 and ((buffer\$3 or memory or memories) with (stor\$4 or transfer\$4))	USPAT	OR	ON	2005/07/20 14:20
S66	2508	S65 and (data or packet or information)	USPAT	OR	ON	2005/07/20 14:21
S67	2411	S66 and (transfer\$3 or transmit\$4 or send\$3 or sent)	USPAT	OR	ON	2005/07/20 14:21
S68	2300	S67 and (receiv\$3)	USPAT	OR	ON	2005/07/20 14:21
S69	1134	S68 and ((software or program) with interfac\$3)	USPAT	OR	ON	2005/07/20 14:22
S70	256	S69 and thread\$3	USPAT	OR	ON	2005/07/20 14:22
S71	237	S70 and display\$3	USPAT	OR	ON	2005/07/20 14:22
S72	235	S71 and (stor\$3 or sav\$3)	USPAT	OR	ON	2005/07/20 14:22
S73	235	S72 and (modify\$3 or modified or chang\$3)	USPAT	OR	ON	2005/07/20 14:23
S74	196	S73 and (remov\$3 or discard\$3)	USPAT	OR	ON	2005/07/20 14:46
S75	1	"5907695".pn.	USPAT	OR	ON	2005/07/20 14:59
S76	0	"09863619"	USPAT	OR	ON	2005/07/20 15:00
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S81	0	"09849010"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/20 15:02
S85	0	"5881269A".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/20 15:08
S88	2	"5881269".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:24
S89	2	"5761486".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/20 15:31
S90	2	"5850345".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/20 15:32
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S93	2	"6571356".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/21 13:36
S94	2	"5809282".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/21 13:40
S95	2	"6366875".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/21 13:41
S96	2	"5881267".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/21 13:51
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S98	2	"5889954".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/21 14:19
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S10 2	2	"5303347".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/21 14:24
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S10 4	2	"5392406".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/21 17:24
S10 5	27851	(computer with network\$3) and @rlad<"20000228"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/22 15:17
S10 6	5046	S105 and simulat\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/22 15:17
S10 7	2514	S106 and ((buffer\$3 or memory or memories) with (stor\$4 or transfer\$4))	USPAT	OR	ON	2005/07/22 15:17
S10 8	2508	S107 and (data or packet or information)	USPAT	OR	ON	2005/07/22 15:17
S10 9	2411	S108 and (transfer\$3 or transmit\$4 or send\$3 or sent)	USPAT	OR	ON	2005/07/22 15:17
S11 0	2300	S109 and (receiv\$3)	USPAT	OR	ON	2005/07/24 14:34
S11 1	92	S110 and preamble	USPAT	OR	ON	2005/07/22 15:17



S11 2	0	09/863619	US-PGPUB; USPAT; USOCR; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:25
S11 3	0	"09863619"	US-PGPUB; USPAT; USOCR; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:25
S11 5	0	"09849010"	USPAT	OR	ON	2005/07/24 14:32
S11 6	555599	(system or network or simulation) and @rlad<"20000228"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:31
S11 8	2	"5881269".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:32
S11 9	2	"5761486".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:33
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S12 1	5046	S120 and simulat\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:34
S12 2	2514	S121 and ((buffer\$3 or memory or memories) with (stor\$4 or transfer\$4))	USPAT	OR	ON	2005/07/24 14:34
S12 3	2508	S122 and (data or packet or information)	USPAT	OR	ON	2005/07/24 14:34
S12 4	2411	S123 and (transfer\$3 or transmit\$4 or send\$3 or sent)	USPAT	OR	ON	2005/07/24 14:34
S12 5	2300	S124 and (receiv\$3)	USPAT	OR	ON	2005/07/24 14:36

S12 6	92	S125 and preamble	USPAT	OR	ON	2005/07/24 15:19
S12 7	2	"5907696".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:41
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S13 3	90	"5136582"	US-PGPUB; USPAT; USOCR; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:45
S13 4	2	"5136582".pn.	US-PGPUB; USPAT; USOCR; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:52

S13 5	2	"5303347".pn.	US-PGPUB; USPAT; USOCR; DERWENT; IBM_TDB	OR	ON	2005/07/24 14:52
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S14 1	92	S126 and compar\$5	USPAT	OR	ON	2005/07/24 15:53
S14 2	13	(network and simulator).ab. and @rlad<"20000228"	USPAT	OR	ON	2005/07/24 16:13
S14 3	186	(network with simulator) and @rlad<"20000228"	USPAT	OR	ON	2005/07/24 16:13


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### 1 [Mobile wireless network system simulation](#)

Joel Short, Rajive Bagrodia, Leonard Kleinrock

 February 1995 **Wireless Networks**, Volume 1 Issue 4

 Full text available: [pdf\(1.70 MB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

This paper describes an advanced simulation environment which is used to examine, validate, and predict the performance of mobile wireless network systems. This simulation environment overcomes many of the limitations found with analytical models, experimentation, and other commercial network simulators available on the market today. We identify a set of components which make up mobile wireless systems and describe a set of flexible modules which can be used to model the various components ...

### 2 [MR<sup>2</sup>RP: the multi-rate and multi-range routing protocol for IEEE 802.11 ad hoc wireless networks](#)

Shjann-Tsong Sheu, Yihjia Tsai, Jenhui Chen

 March 2003 **Wireless Networks**, Volume 9 Issue 2

 Full text available: [pdf\(252.69 KB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper discusses the issue of routing packets over an IEEE 802.11 *ad hoc* wireless network with multiple data rates (1/2/5.5/11 Mb/s). With the characteristics of modulation schemes, the data rate of wireless network is inversely proportional with the transmission distance. The conventional shortest path of minimum-hops approach will be no longer suitable for the contemporary multi-rate/multi-range wireless networks (MR<sup>2</sup>WN). In this paper, we will propose an efficient delay- ...

**Keywords:** ad hoc, local area network (LAN), medium access control (MAC), routing, wireless

### 3 [Mobile wireless network system simulation](#)

Joel Short, Rajive Bagrodia, Leonard Kleinrock

 December 1995 **Proceedings of the 1st annual international conference on Mobile computing and networking**

 Full text available: [pdf\(1.63 MB\)](#)

 Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

### 4 [Applications, services, and architecture: Supporting real-time speech on wireless ad](#)

### hoc networks: inter-packet redundancy, path diversity, and multiple description coding

Chi-hsien Lin, Hui Dong, Upamanyu Madhow, Allen Gersho

October 2004 **Proceedings of the 2nd ACM international workshop on Wireless mobile applications and services on WLAN hotspots**

Full text available:  [pdf\(554.02 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We consider the problem of supporting real-time traffic over packetized wireless ad hoc networks. Our specific emphasis is on speech, since this is a critical application in many scenarios such as emergency deployment of ad hoc networks. Standard retransmission-based Medium Access Control (MAC) strategies are poorly matched to speech applications, because the payload size for speech as well as for MAC-layer acknowledgements (ACKs) is small compared to the packet header, which contains a large ...

**Keywords:** 802.11, ad hoc, path diversity, real-time, speech, wireless

### 5 Balancing performance and flexibility with hardware support for network architectures

Ilija Hadžić, Jonathan M. Smith

November 2003 **ACM Transactions on Computer Systems (TOCS)**, Volume 21 Issue 4

Full text available:  [pdf\(719.03 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The goals of performance and flexibility are often at odds in the design of network systems. The tension is common enough to justify an architectural solution, rather than a set of context-specific solutions. The Programmable Protocol Processing Pipeline (P4) design uses programmable hardware to selectively accelerate protocol processing functions. A set of field-programmable gate arrays (FPGAs) and an associated library of network processing modules implemented in hardware are augmented with so ...

**Keywords:** FPGA, P4, computer networking, flexibility, hardware, performance, programmable logic devices, programmable networks, protocol processing

### 6 High-speed local area networks and their performance: a survey

Bandula W. Abeyesundara, Ahmed E. Kamal

June 1991 **ACM Computing Surveys (CSUR)**, Volume 23 Issue 2

Full text available:  [pdf\(3.83 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

At high data transmission rates, the packet transmission time of a local area network (LAN) could become comparable to or less than the medium propagation delay. The performance of many LAN schemes degrades rapidly when the packet transmission time becomes small comparative to the medium propagation delay. This paper introduces LANs and discusses the performance degradation of LANs at high speeds. It surveys recently proposed LAN schemes designed to operate at high data rates, including the ...

**Keywords:** access schemes, computer networks, data communication, medium access protocols, optical fiber networks

### 7 Performance of the Expressnet with voice/data traffic

Timothy A. Gonsalves, Fouad A. Tobagi

May 1987 **ACM SIGMETRICS Performance Evaluation Review , Proceedings of the 1987 ACM SIGMETRICS conference on Measurement and modeling of computer systems**, Volume 15 Issue 1

Full text available:  [pdf\(1.25 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)


In the past few years, local area networks have come into widespread use for the

interconnection of computers. Together with the trend towards digital transmission in voice telephony, this has spurred interest in integrated voice/data networks. The Expressnet, an implicit-token round-robin scheme using unidirectional busses, achieves high performance even at bandwidths of 100 Mb/s. Other features that make the protocol attractive for voice/data traffic are bounded delays and priorities. The ...

#### 8 Performance optimization of wireless local area networks through VLSI data compression

Bongjin Jung, Wayne P. Burleson

January 1998 **Wireless Networks**, Volume 4 Issue 1

Full text available:  [pdf\(664.69 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In contrast to wireline communication, the physical bandwidth of RF wireless communication systems is relatively limited and is unlikely to grow significantly in the future. Hence it is advantageous to increase the effective bandwidth of communication channels at the expense of complex processing at both the sending and receiving entities. In this paper we present a real-time, low-area, and low-power VLSI lossless data compressor based on the first Lempel-Ziv algorithm (Ziv and Lempel, 1977 ...

#### 9 Congestion control: Practical lazy scheduling in sensor networks

Ramana Rao Kompella, Alex C. Snoeren

November 2003 **Proceedings of the 1st international conference on Embedded networked sensor systems**

Full text available:  [pdf\(284.79 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)


Experience has shown that the power consumption of sensors and other wireless computational devices is often dominated by their communication patterns. We present a practical realization of lazy packet scheduling that attempts to minimize the total transmission energy in a broadcast network by dynamically adjusting each node's transmission power and rate on a per-packet basis. Lazy packet scheduling leverages the fact that many channel coding schemes are more efficient at lower transmission rate ...

**Keywords:** distributed algorithms, energy conservation, lazy scheduling, sensor networks

#### 10 Packet voice communications over PC based local area networks

Eluzor Friedman, Chaim Ziegler

December 1986 **Proceedings of the 1986 ACM SIGSMALL/PC symposium on Small systems**


Full text available:  [pdf\(559.08 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper presents actual implementations of packet voice communication systems over two types of PC based local area networks. One is a token-passing ring network and the other is an Ethernet network. The system configuration, system operation and system performance analysis is described for both networks. A formula for the maximum allowable number of active voice stations is presented for both systems. The last part of the paper describes a proposed design for a distributed pac ...

#### 11 Improving TCP performance over wireless networks at the link layer

Christina Parsa, J. J. Garcia-Luna-Aceves

March 2000 **Mobile Networks and Applications**, Volume 5 Issue 1

Full text available:  [pdf\(324.14 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


We present the transport unaware link improvement protocol (TULIP), which dramatically

improves the performance of TCP over lossy wireless links, without competing with or modifying the transport- or network-layer protocols. TULIP is tailored for the half-duplex radio links available with today's commercial radios and provides a MAC acceleration feature applicable to collision-avoidance MAC protocols (e.g., IEEE 802.11) to improve throughput. TULIP's timers rely on a maximum propagation delay ...

## 12 Routing and MAC: Versatile low power media access for wireless sensor networks

Joseph Polastre, Jason Hill, David Culler

November 2004 **Proceedings of the 2nd international conference on Embedded networked sensor systems**

Full text available:  [pdf\(529.51 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


We propose *B-MAC*, a carrier sense media access protocol for wireless sensor networks that provides a flexible interface to obtain ultra low power operation, effective collision avoidance, and high channel utilization. To achieve low power operation, *B-MAC* employs an adaptive preamble sampling scheme to reduce duty cycle and minimize idle listening. *B-MAC* supports on-the-fly reconfiguration and provides bidirectional interfaces for system services ...

**Keywords:** communication interfaces, energy efficient operation, media access protocols, networking, reconfigurable protocols, wireless sensor networks

## 13 Congestion control: CODA: congestion detection and avoidance in sensor networks

Chieh-Yih Wan, Shane B. Eisenman, Andrew T. Campbell

November 2003 **Proceedings of the 1st international conference on Embedded networked sensor systems**

Full text available:  [pdf\(298.36 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Event-driven sensor networks operate under an idle or light load and then suddenly become active in response to a detected or monitored event. The transport of event impulses is likely to lead to varying degrees of congestion in the network depending on the sensing application. It is during these periods of event impulses that the likelihood of congestion is greatest and the information in transit of most importance to users. To address this challenge we propose an energy efficient congestion control ...

**Keywords:** energy efficient congestion control, wireless sensor networks

## 14 Tree multicast strategies in mobile, multishop wireless networks

Mario Gerla, Ching-Chuan Chiang, Lixia Zhang

October 1999 **Mobile Networks and Applications**, Volume 4 Issue 3

Full text available:  [pdf\(285.79 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Tree multicast is a well established concept in wired networks. Two versions, per-source tree multicast (e.g., DVMRP) and shared tree multicast (e.g., Core Based Tree), account for the majority of the wireline implementations. In this paper, we extend the tree multicast concept to wireless, mobile, multihop networks for applications ranging from ad hoc networking to disaster recovery and battlefield. The main challenge in wireless, mobile networks is the rapidly changing environment. We add ...

## 15 PAMAS—power aware multi-access protocol with signalling for ad hoc networks

Suresh Singh, C. S. Raghavendra

July 1998 **ACM SIGCOMM Computer Communication Review**, Volume 28 Issue 3

Full text available:  [pdf\(1.84 MB\)](#) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

In this paper we develop a new multiaccess protocol for ad hoc radio networks. The protocol is based on the original MACA protocol with the addition of a separate signalling channel. The unique feature of our protocol is that it conserves battery power at nodes by intelligently powering off nodes that are not actively transmitting or receiving packets. The manner in which nodes power themselves off does not influence the delay or throughput characteristics of our protocol. We illustrate the power ...

16 Special issue on wireless pan & sensor networks: A study of energy consumption and reliability in a multi-hop sensor network

Jonathan M. Reason, Jan M. Rabaey

January 2004 **ACM SIGMOBILE Mobile Computing and Communications Review**, Volume 8 Issue 1

Full text available:  [pdf\(477.91 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

For a moderate-size, multi-hop, sensor network, we present experimental measurements of radio energy consumption and packet reliability. We categorize the energy measurements by energy consumed in each radio state and for each traffic type. Packet reliability results are presented from a network and link perspective, whereas prior work only considered the former. We introduce a novel technique of application-aware radio duty cycling called on-demand spatial TDMA. When compared to the non-cycling ...

17 Analysis of Ad Hoc Networks: Energy-aware routing in MANETs: analysis and enhancements

Ahmed Safwat, Hossam Hassanein, Hussein Mouftah

September 2002 **Proceedings of the 5th ACM international workshop on Modeling analysis and simulation of wireless and mobile systems**

Full text available:  [pdf\(207.35 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Wireless mobile ad hoc stations have limited battery capacity. Hence, ad hoc routing protocols ought to be energy conservative. However, The simulation studies carried out for table-driven and on-demand ad hoc routing protocols fall short of examining essential power-based performance metrics, such as average node and network lifetime, energy-based protocol fairness, average dissipated energy per protocol, and standard deviation of the energy dissipated by each individual node. In this paper, we ...

**Keywords:** IEEE 802.11, MAC, PLCP, energy conservation, wireless ad hoc networks

18 Dynamic QoS allocation for multimedia ad hoc wireless networks

Hsiao-Kuang Wu, Pei-Hung Chuang

August 2001 **Mobile Networks and Applications**, Volume 6 Issue 4

Full text available:  [pdf\(188.68 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this paper, we propose an approach to support QoS for multimedia applications in ad hoc wireless network. An ad hoc network is a collection of mobile stations forming a temporary network without the aid of any centralized coordinator and is different from cellular networks which require fixed base stations interconnected by a wired backbone. It is useful for some special situations, such as battlefield communications and disaster recovery. The approach we provide uses CSMA/CA medium access ...

19 A trace-based evaluation of adaptive error correction for a wireless local area network

David A. Eckhardt, Peter Steenkiste

December 1999 **Mobile Networks and Applications**, Volume 4 Issue 4

Full text available:  [pdf\(243.29 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)




[terms](#)

Wireless transmissions are highly susceptible to noise and interference. As a result, the error characteristics of a wireless link may vary widely depending on environmental factors such as location of the communicating systems and activity of competing radiation sources, making error control a difficult task. In this paper we evaluate error control strategies for a wireless LAN. Based on low-level packet traces of WaveLAN, we first show that forward error correction (FEC) is effective in r ...

20 [Efficient use of workstations for passive monitoring of local area networks](#)

J. Mogul

August 1990 **ACM SIGCOMM Computer Communication Review , Proceedings of the ACM symposium on Communications architectures & protocols**, Volume 20 Issue 4

Full text available:  [pdf\(1.46 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Effective management of a local area network (LAN) requires not only a protocol to manage the active entities, but also a means to monitor the LAN channel. This is especially true in shared-channel LANs, such as Ethernet, where the behavior of the LAN as a whole may be impractical to deduce from the states of the individual hosts. Passive monitoring can be done using either a dedicated system or a general-purpose system. Dedicated monitors have been favored for several reasons, but recent w ...

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Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>60193169</u>	Not Issued	159	03/28/2000	METHOD FOR CONNECTING A HARDWARE EMULATOR TO A NETWORK	ZEIDMAN, ROBERT M.
<u>11160815</u>	Not Issued	019	07/11/2005	METHOD FOR COMPANIES TO CONDUCT TRANSACTIONS DURING MEDIA BROADCASTS	ZEIDMAN, ROBERT MARC
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<u>10914070</u>	Not Issued	030	08/09/2004	COMPARTMENT IN AN AUTOMOBILE FOR STORING AN UMBRELLA	ZEIDMAN, ROBERT MARC
<u>10720636</u>	Not Issued	030	11/25/2003	SOFTWARE TOOL FOR DETECTING PLAGIARISM IN COMPUTER SOURCE CODE	ZEIDMAN, ROBERT M.
<u>10688573</u>	Not Issued	020	10/20/2003	SOFTWARE TOOL FOR SYNTHESIZING A REAL-TIME OPERATING SYSTEM	ZEIDMAN, ROBERT M.
<u>10604156</u>	Not Issued	030	06/27/2003	METHOD AND APPARATUS FOR SYNTHESIZING A HARDWARE SYSTEM FROM A SOFTWARE DESCRIPTION	ZEIDMAN, ROBERT MARC
<u>10249938</u>	Not Issued	030	05/20/2003	METHOD AND APPARATUS FOR EMULATING A HARDWARE/SOFTWARE SYSTEM USING A COMPUTER	ZEIDMAN, ROBERT M.
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